REMARKS/ARGUMENTS

Claim 5 and claims 9 and 11 (dependent on claim 5) are indicated to be allowable. claim 5 is rewritten to be independent. allowance of these claims is respectfully requested.

Claims 1-3, 6-8 and 10 are rejected as anticipated Ban et al. USP 5,246,586. Differences in claim details from the Ban et al. disclosure are considered as insufficient to distinguish the invention as claimed. Reconsideration is requested.

The present invention is not the same as Ban et al. The principle of operation and the result are different. In order to avoid an interpretation which is broad enough to support an anticipation rejection, additional clarification is added to claim 1 based on the specification portions noted below.

At page 3 of the final official action, the Examiner states that "as for the applicant's argument that this invention relates to a cleaning method and basically differs from Ban et al. relating to a production method, the distinction therebetween can be appreciated, but process limitations patentably distinguishing

this invention from Ban et al. are not recited in the claims, and the language "cleaning" in the claim preamble also fails to distinguish this invention therefrom.

To avoid this issue, claim 1 is amended to change the preamble to better define the cleaning inherent in the earlier claim recitation. More specifically, claim 1 now specifies --A cleaning method for removing fine particles remaining adhered to at least part of an ultrapure water supply system due to electrostatic attractive force--. The amended claim 1 specifically states the reason for changing the potential of the particles that "in step (a), by changing the surface potential of the fine particles, the electrostatic attractive force between the fine particles and the at least part of the ultrapure water supply system is eliminated, or repulsive electrostatic force is produced therebetween." Furthermore, claim 1 now states that "in step (b), the fine particles negatively charged in the step (a) are discharged to the outside of the ultrapure water supply system, together with cleaning liquid or ultrapure water for rinsing." With these changes it becomes clear that the claimed invention relates to a cleaning method which is different in principle and in the process steps in Ban et al. Support for the

amendments to claim 1 is found at page 11, line 24 to page 12, line 6 of the specification.

The Examiner contends that the claims fail to recite limitations commensurate with the previous argument that

> "...the present invention does not use component units of the ultrapure water supply system in removing fine particles, and Ban et al. does not teach a technical concept for removing fine particles from surface of system elements."

To respond to this interpretation by the Examiner, claim 1 clarifies that "the cleaning liquid or ultrapure water for rinsing containing the negatively charged fine particles bypasses that element of the ultrapure water supply system which serves to remove the negatively charged fine particles in the ultrapure water supply system." This distinguishes from Ban et al. in that the present invention does not include the use of component units of the ultrapure water supply system in removing fine particles.

Concerning the distinctions from the use of the system components, applicants note the specification at page 20, lines 8-10 which states that "the cleaning liquid 8 was caused to flow through the bypass passage 30 bypassing the ion exchange resin tower 24." In this invention, it is preferable that the cleaning liquid or ultrapure water for rinsing, bypass an element

(corresponding to ion exchange resin) of the ultrapure water supply system which element removes fine particles that reach it. To avoid the issues raised by the Examiner's interpretation of the claims, claim 1 is limited to this preferred embodiment. In a case where the cleaning liquid is caused to flow into e.g. an ion exchange resin, negatively charged fine particles are removed by the ion exchange resin, and the removed fine particles accumulate therein. This necessitates the replacement of the ion exchange resin with new one before ultrapure water production, requiring ineffective labor for the replacement. If the cleaning liquid containing alkali or surfactant were allowed to flow through an apparatus having an ion exchange resin, the alkali or surfactant would be removed by the ion exchange resin. Thus, fine particles adhering to a system element disposed downstream of the ion exchange resin cannot be removed by passing the cleaning liquid of the present invention. On the contrary, the present invention prevents or reduces such problems by removing the cleaning liquid or ultrapure water for rinsing from the system element (ion exchange resin) before it can pass through the system element.

As pointed out in the previous response, Ban et al. merely disclose an apparatus and method for producing ultrapure water and a method of controlling the apparatus, and differs in principle from the present invention relating to a method for cleaning an ultrapure water supply system. In order to clarify this basic difference between this invention and Ban et al., claim 1 is amended as mentioned above.

In Ban et al., an alkali is poured into the pretreated water (primary pure water) before the water is caused to flow to an ion exchange resin. Even if fine particles are negatively charged by the added alkali, the negatively charged fine particles are removed by an anion exchange resin tower 8 and an RO unit 11 that are elements of the ultrapure production apparatus (col. 4, lines 19-37). In this manner, Ban et al.'s method is designed to remove negatively charged fine particles with use of elements of the ultrapure production apparatus.

In contrast, at the time of cleaning the ultrapure water supply system, the invention claimed in amended claim 1 causes the cleaning liquid or ultrapure water for rinsing containing the negatively charged fine particles to bypass the element serving to remove the negatively charged fine particles. In other

words, in the present invention, no water is supplied to that element of the ultrapure production apparatus, such as ion exchange resin, which is capable of removing the negatively charged fine particles. Thus, unlike Ban et al., this invention does not use component units of the ultrapure water production apparatus in removing the negatively charged fine particles.

As discussed above, the invention defined in amended claim 1 is entirely different in construction, function and advantage from Ban et al. Hence, it is submitted that the present invention is not anticipated by Ban et al. Also, this invention cannot be considered as being obvious from Ban et al.

Concerning the rejection of claim 4, the Examiner indicates that the range of a flow velocity claimed in claim 4 falls within an ordinary technical matter since unexpected results or criticality of the claimed range is not shown.

However, the description

> "As seen from FIG. 3, the cleaning effect obtained with the flow velocity 0.25 m/sec is not of satisfactorily level, and the cleaning effect does not significantly improve and becomes almost saturated at a flow velocity exceeding 2.0 m/sec. Accordingly, a preferred range of the flow velocity is considered to be 0.5 to 2.0 m/sec."

stated at page 14, lines 29-33 of the specification clearly

indicates that the invention claimed in claim 4 produces unexpected results that "a required cleaning effect can be achieved without causing undesired energy consumption." Thus, the Examiner's contention that "the flow velocity range recited in claim 4 is an ordinary technical matter" is incorrect.

In view of the above, it is submitted that the present invention is not anticipated by nor obvious from Ban et al. Allowance of the application is respectfully requested.

Respectfully submitted,

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